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BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS

CONTENTS

Volume 166, Number 1, January 15, 1990

AUTHOR INDEX, Volume 166, Number 1, January 15, 1990 iii

Transcription of Human Endogenous Retroviral Long Terminal Repeat (LTR) Sequence in a Lung Cancer Cell Line
Naohiro Tomita, Akira Horii, Sadayuki Doi, Hideoki Yokouchi, Michio Ogawa, Takesada Mori, and Kenichi Matsubara 1

Binding of Low Mobility Group Protein from Rat Liver Chromatin with Histones Studied by Chemical Cross-Linking
Ewa Wiland, Barbara Siemieniako, and Wieslaw H. Trzeciak 11

Adrenergic and Calcium-Mediated Subcellular Redistribution of Protein Kinase C in Primary Neuronal Cultures
Christopher J. Kalberg and Colin Sumners 22

In Vivo Incorporation of the Intrinsic Photolabel 4-Thiouridine into *Escherichia coli* RNAs *Roberto Bezerra and Alain Favre* 29

The Preparation of an Enzyme Associated with Aflatoxin Biosynthesis by Affinity Chromatography *Anil A. Chuturgoon, Michael F. Dutton, and Ronald K. Berry* 38

Cloning of a *hsp70*-Related Gene Expressed in Mouse Spermatids
Midori Matsumoto and Hirokazu Fujimoto 43

Expression of Human Parathyroid Hormone in *Escherichia coli*
A. Høgset, O. R. Blingsmo, V. T. Gautvik, O. Sæther, P. B. Jacobsen, J. O. Gordeladze, P. Alestrøm, and K. M. Gautvik 50

Conserved Residues of Liquefying α-Amylases Are Concentrated in the Vicinity of Active Site *Mauno Vihinen and Pekka Mäntsälä* 61

Presence in Invertebrate Genomes of Sequences Characterized by the Repetition of the Triplet CCPurine
Norbert Bakalara, Joan Collet, Richard Planells, Yves Thouveny, and Michel Fontes 66

Modulators of the Multidrug-Transporter, P-Glycoprotein, Exist in the Human Plasma *Misako Ichikawa, Akihiko Yoshimura, Tatsuhiko Furukawa, Tomoyuki Sumizawa, and Shin-ichi Akiyama* 74

A Novel Peptide Which Stimulates Adenylate Cyclase: Molecular Cloning and Characterization of the Ovine and Human cDNAs
Chiharu Kimura, Shoichi Ohkubo, Kazuhiro Ogi, Masaki Hosoya, Yasuaki Itoh, Haruo Onda, Atsuro Miyata, Lun Jiang, Raymond R. Dahl, Henry H. Stibbs, Akira Arimura, and Masahiko Fujino 81

Expression of Epidermal Growth Factor Receptor Sequences as *Escherichia coli* Fusion Proteins: Applications in the Study of Tyrosine Kinase Function
John G. Koland, Karen Maddison O'Brien, and Richard A. Cerione 90

Human Complex II (Succinate-Ubiquinone Oxidoreductase): cDNA Cloning of Iron Sulfur(Ip) Subunit of Liver Mitochondria
Kiyoshi Kita, Hiroshi Oya, Robert B. Gennis, Brian A. C. Ackrell, and Michihiro Kasahara 101

Identification by Sequence Analysis of a Second Rat Brain cDNA Encoding the Dopamine (D2) Receptor
Jeannette C. Miller, Yan Wang, and David Filer 109

Electrofusion of Oriented Schizosaccharomyces Pombe Cells through Apical Protoplast-Protuberances
V. Vondrejs, I. Pavliček, M. Kothera, and Z. Palková 113

IFN-γ-Activated Macrophages: Detection by Electron Paramagnetic Resonance of Complexes between L-Arginine-Derived Nitric Oxide and Non-heme Iron Proteins *Catherine Pellat, Yann Henry, and Jean-Claude Drapier* 119

Substrate Competition and Specificity at the Active Site of Amylopullulanase from *Clostridium thermohydrosulfuricum*
Saroj Mathupala, Badal C. Saha, and J. Gregory Zeikus 126

Differential Induction of Transcription for Glucocorticoid-Responsive Genes in Cultured Rat Hepatocytes
Vicki L. Nebes, Donald DeFranco, and Sidney M. Morris, Jr. 133

Internal Amino Acid Sequencing of Proteins by *in Situ* Cyanogen Bromide Cleavage in Polyacrylamide Gels
Willi Jahnen, Larry D. Ward, Gavin E. Reid, Robert L. Moritz, and Richard J. Simpson 139

Purification and Measurement of Calpromotin, the Cytoplasmic Protein Which Activates Calcium-Dependent Potassium Transport
R. B. Moore, G. A. Plishker, and S. K. Shriver 146

Expression of Biologically Active Human Platelet-Derived Growth Factor (PDGF) B-Receptor in *Xenopus laevis* Oocytes
M. Gassmann, M. Hosang, and J. Mous 154

Induction of Differentiation of Human and Mouse Myeloid Leukemia Cells by Camptothecin *Sawako Chou, Motohisa Kaneko, Kazuyasu Nakaya, and Yasuharu Nakamura* 160

Whole Mouse Nitroxide Free Radical Pharmacokinetics by Low Frequency Electron Paramagnetic Resonance
Marco Ferrari, Silvia Colacicchi, Giancaterino Gualtieri, Maria Teresa Santini, and Antonello Sotgiu 168

The Brain-Type Glucose Transporter mRNA Is Specifically Expressed at the Blood–Brain Barrier *Ruben J. Boado and William M. Pardridge* 174

Use of Recombinant P-Glycoprotein Fragments to Produce Antibodies to the Multidrug Transporter *Shigeo Tanaka, Stephen J. Currier, Edward P. Bruggemann, Kazumitsu Ueda, Ursula A. Germann, Ira Pastan, and Michael M. Gottesman* 180

NAP-1/IL-8 Induces Upregulation of CR1 Receptors in Human Neutrophil Leukocytes *J.-P. Paccaud, J. A. Schifferli, and M. Baggiolini* 187

Androgen Receptor Heterogeneity and Phosphorylation in Human LNCaP Cells
J. H. van Laar, J. Bolt-de Vries, N. D. Zegers, J. Trapman, and A. O. Brinkmann 193

The Use of Proteolysis and Direct N-Terminal Sequence Analysis to Study Human Interleukin-2/Receptor Interaction on Solid Support
Yu-Ching E. Pan, Feng Wang, May C. Miedel, David V. Weber, Pascal Bailon, Fazlur R. Khan, and Jeffrey D. Hulmes 201

The Effects of Recombinant Human Interleukin-1β on Cellular Proliferation and the Production of Prostaglandin E_2, Plasminogen Activator, Osteocalcin, and Alkaline Phosphatase by Osteoblast-like Cells Derived from Human Bone
D. B. Evans, R. A. D. Bunning, and R. G. G. Russell 208

Ca^{2+}-Channel Agonist BAY K8644 Mimics $1,25(OH)_2$-Vitamin D_3 Rapid Enhancement of Ca^{2+} Transport in Chick Perfused Duodenum
Ana R. de Boland, Ilka Nemere, and Anthony W. Norman 217

Evidence that *Xenopus laevis* Contains Two Different Nonallelic Insulin-like Growth Factor-I Genes
Alan R. Shuldiner, Ajay Nirula, Laurie A. Scott, and Jesse Roth 223

Observation of Tissue Prokallikrein Activation by Some Serine Proteases, Arginine Esterases in Rat Submandibular Gland
Masafumi Kamada, Naoto Furuhata, Takamasa Yamaguchi, Masahiko Ikekita, Kazuyuki Kizuki, and Hiroshi Moriya 231

Identification of a Potentially Neurotoxic Pyridinium Metabolite of Haloperidol in Rats *Babu Subramanyam, Hans Rollema, Thomas Woolf, and Neal Castagnoli, Jr.* 238

S-(*N*-Methylcarbamoyl)glutathione: A Reactive S-Linked Metabolite of Methyl Isocyanate *Paul G. Pearson, J. Greg Slatter, Mohamed S. Rashed, Deog-Hwa Han, Mark P. Grillo, and Thomas A. Baillie* 245

Extracellular ATP Shows Synergistic Enhancement of DNA Synthesis when Combined with Agents That Are Active in Wound Healing or as Neurotransmitters *Dingji Wang, Ning-Na Huang, and Leon A. Heppel* 251

The α_1-Adrenergic Photoaffinity Probe [^{125}I]Arylazidoprazosin Binds to a Specific Peptide of P-Glycoprotein in Multidrug-Resistant Cells
Ahmad R. Safa, Michael Agresti, Ikumi Tamai, Nitin D. Mehta, and Soheila Vahabi 259

Regulation of Protein Kinase Fa (a Transmembrane Signal and Insulin and Epidermal Growth Factor) in the Brain
Shiaw-Der Yang, Jau-Song Yu, and Hua-Chien Chen 267

The Metabolism of 3′-Azido-2′,3′-dideoxyguanosine in CEM Cells
Anna Karlsson, Peter Reichard, and Fritz Eckstein 273

Primary Structure, *in Vitro* Expression and Import into Mitochondria of a 29/21-KDA Subunit of Complex I from *Neurospora crassa*
Arnaldo Videira, Maximilian Tropschug, and Sigurd Werner 280

Receptor Binding of Cholecystokinin Analogues in Isolated Rat Pancreatic Acini
Ryuichiro Doi, Ryo Hosotani, Kazutomo Inoue, Nobutaka Fujii, Haruaki Yajima, Phillip L. Rayford, and Takayoshi Tobe 286

Structural Features Associated with α-Anomerie in Oligo-α-thymidylates
Jean-Remi Bertrand, Didier Bazile, Claude Malvy, and Jacques Paoletti 293

Solubilization and Characterization of Endothelin-1 Receptors in Rat Cardiac Tissue *Jianjun Liu, Janice Kelly, David J. Casley, Colin I. Johnston, and Winifred G. Nayler* 299

Tumor Necrosis Factor-α/Cachectin Activates the O_2^--Generating System of Human Neutrophils Independently of the Hydrolysis of Phosphoinositides and the Release of Arachidonic Acid
Carlo Laudanna, Shmuel Miron, Giorgio Berton, and Filippo Rossi 308

Proteolytic Processing in a Non-lysosomal Compartment Is Required for Transcytosis of Protein-Polylysine Conjugates in Cultured Madin-Darby Canine Kidney Cells
Wei-Chiang Shen, Jiansheng Wan, and Daisy Shen 316

Interleukin 1 Increases the Production of Endothelin by Cultured Endothelial Cells *Masao Yoshizumi, Hiroki Kurihara, Toshisuke Morita, Takahiro Yamashita, Yoshio Oh-hashi, Takao Sugiyama, Fumimaro Takaku, Masashi Yanagisawa, Tomoh Masaki, and Yoshio Yazaki* 324

Apocarboxypeptidase B–Sepharose: A Specific Adsorbent for Peptides
Toshimasa Yasuhara and Akira Ohashi 330

Demonstration of a New Mouse Mammary Tumor Virus Locus in the Genome of the Mammary Tumor Prone Strain SHN Mouse
Akio Koizumi, Mikako Tsukada, Yasuhiko Wada, and Sigetosi Kamiyama 336

Solubilization and Characterization of Leukotriene B_4 Receptor–GTP Binding Protein Complex from Porcine Spleen
Ichiro Miki, Tsuyoshi Watanabe, Motonao Nakamura, Yousuke Seyama, Michio Ui, Fumie Sato, and Takao Shimizu 342

Phorbol Ester-Mediated Induction of HIV-1 from a Chronically Infected Promonocyte Clone: Blockade by Protein Kinase Inhibitors and Relationship to *tat*-Directed *trans*-Activation
Jeffrey Laurence, Santosh K. Sikder, Sanjiv Jhaveri, and Jane E. Salmon 349

Expression of Rat Pancreatic Lipase Gene Is Modulated by a Lipid-Rich Diet at a Transcriptional Level *Catherine Wicker and Antoine Puigserver* 358

Structural Characterization of the Human Estrogen Synthetase (Aromatase) Gene
Nobuhiro Harada, Kazuyo Yamada, Kuniaki Saito, Naomi Kibe, Sumiko Dohmae, and Yasuyuki Takagi 365

Angiotensin II and Bradykinin Stimulate Phosphoinositide Breakdown in Intact Rat Kidney Glomeruli but not in Proximal Tubules: Glomerular Response Modulated by Phorbol Ester *M. Chandra Sekar, Maria Yang, Elias Meezan, and Dennis J. Pillion* 373

Formation of Inositol Pentakisphosphate by Ovarian Follicles of *Xenopus laevis* from Metabolism of Inositol (1,4,5)-Trisphosphate and Inositol (1,3,4,5)-Tetrakisphosphate, and from Receptor Activation
Rosalind P. McIntosh and James E. A. McIntosh 380

Purification to Homogeneity of GD3 Synthase and Partial Purification of GM3 Synthase from Rat Brain *Xin-Bin Gu, Tian-Jue Gu, and Robert K. Yu* 387

Cloning, Sequencing, and Expression of Human TSH Receptor
Micheline Misrahi, Hugues Loosfelt, Michel Atger, Sokhavuth Sar, Anne Guiochon-Mantel, and Edwin Milgrom 394

Sugar Receptor-Mediated Drug Delivery to Macrophages in the Therapy of Experimental Visceral Leishmaniasis
Prasanta Chakraborty, Amar N. Bhaduri, and Pijush K. Das 404

Augmentation of Forskolin-Induced cAMP Production by Ouabain in Rat Renal Papillary Collecting Tubule Cells in Culture
San-e Ishikawa and Toshikazu Saito 411

Hydrogen Peroxide: A Potent Activator of Dioxygenase Activity of Soybean Lipoxygenase *Arun P. Kulkarni, Ashoke Mitra, Jayanta Chaudhuri, Janusz Z. Byczkowski, and Ira Richards* 417

Regulation and Energization of Nitrate Transport in a Halophilic *Pseudomonas stutzeri* *Fiona M. Dias, Roy M. Ventullo, and John J. Rowe* 424

Role of Minor Subunits in the Structural Asymmetry of the *Escherichia coli* F_1-ATPase *Philip D. Bragg and Cynthia Hou* 431

Pepsin, and Aspartic Protease, Converts Porcine Big Endothelin to 21-Residue Endothelin *Masanori Takaoka, Yoshifumi Takenobu, Yasushi Miyata, Ruriko Ikegawa, Yasuo Matsumura, and Shiro Morimoto* 436

Bovine Pancreatic DNase I Binds Very Tightly to DNA Fragments and May Be Mistaken for Putative Endogenous Nuclear Proteins Covalently Bound to DNA *Timothy W. Brotherton and David W. Zenk* 443

Inactivation of Bovine Kidney Cytosolic Protamine Kinase by the Catalytic Subunit of Protein Phosphatase 2A *Zahi Damuni* 449

Volume 166, Number 2, January 30, 1990

AUTHOR INDEX, Volume 166, Number 2, January 30, 1990 iii
A Heparin-Binding Erythroid Cell Stimulating Factor from Fetal Bovine Serum Has the N-Terminal Sequence of Insulin-like Growth Factor II *Qinggang Li, Russell Blacher, Fred Esch, and L. Fernando Congote* 557
Hepatocyte Plasma Membrane Ecto-ATPase (pp120/HA4) Is a Substrate for Tyrosine Kinase Activity of the Insulin Receptor *Ronald N. Margolis, Michael J. Schell, Simeon I. Taylor, and Ann L. Hubbard* 562
A Versatile, Highly Reactive, Cross-Linking Reagent: 2,2′-Sulfonylbis[3-methoxy-(*E,E*)-2-Propenenitrile] *Ramachandra S. Hosmane and Craig M. Bertha* 567
Identification and Characterization of Functional D_1 Dopamine Receptors in a Human Neuroblastoma Cell Line *Anita Sidhu and Peter H. Fishman* 574
Angiotensin II and Noradrenaline Increase PDGF-BB Receptors and Potentiate PDGF-BB Stimulated DNA Synthesis in Vascular Smooth Muscle *A. Bobik, S. Grinpukel, P. J. Little, A. Grooms, and G. Jackman* 580
Temporally Defined Induction of c-*fos* in the Rat Pineal *David A. Carter* 589
The Inhibition of Human Neutrophil Elastase and Cathepsin G by Peptidyl 1,2-Dicarbonyl Derivatives *Shujaath Mehdi, Michael R. Angelastro, Joseph P. Burkhart, Jack R. Koehl, Norton P. Peet, and Philippe Bey* 595
Estrogen Receptor Gene Amplification Is Found in Some Estrogen Receptor-Positive Human Breast Tumors *Mónica Nembrot, Brenda Quintana, and José Mordoh* 601
Comparison of Biological Activities of Endothelin-1, -2, and -3 in Murine and Human Fibroblast Cell Lines *Ai Ohnishi-Suzaki, Ken Yamaguchi, Masatoshi Kusuhara, Isamu Adachi, Kaoru Abe, and Satoshi Kimura* 608
Epidermal Growth Factor and Transforming Growth Factor-α Induce Differential Processing of the Epidermal Growth Factor Receptor *Stuart J. Decker* 615
Expression of the Pregnancy-Specific β 1-Glycoprotein Genes in Human Testis *Jimo Borjigin, Le Ann Tease, William Barnes, and Wai-Yee Chan* 622
Nucleotide Sequence of the Raw-Starch-Digesting Amylase Gene from *Bacillus* sp. B1018 and Its Strong Homology to the Cyclodextrin Glucanotransferase Genes *Pichet Itkor, Norihiro Tsukagoshi, and Shigezo Udaka* 630
Evidence for Alternative RNA Splicing and Possible Alternative Promoters in the Human Muscle Phosphofructokinase Gene at the 5′ Untranslated Region *Hiromu Nakajima, Tomoyuki Yamasaki, Tamio Noguchi, Takehiko Tanaka, Norio Kono, and Seiichiro Tarui* 637
A Novel 40-kDa Protein Induced by Heat Shock and Other Stresses in Mammalian and Avian Cells *Kenzo Ohtsuka, Akira Masuda, Akira Nakai, and Kazuhiro Nagata* 642
The Homologous Restriction Factor Is Immunologically Related to Complement Components C8 and C9 and to Lymphocyte Pore-Forming Protein Perforin through Cysteine-Rich Domains *John Ding-E Young, Wendell F. Rosse, and Cynthia S. Hasselkus-Light* 648
Stabilization of Microtubules by GTP Analogues *Magdalena R. Mejillano, Janice S. Barton, and Richard H. Himes* 653
Similar Induction of the Hepatic EGF Receptor *in Vivo* by EGF and Partial Hepatectomy *Staffan Johansson and Göran Andersson* 661

A Single Amino Acid Substitution in Lactate Dehydrogenase Improves the Catalytic Efficiency with an Alternative Coenzyme
Raymond Feeney, Anthony R. Clarke, and J. John Holbrook 667
The Chiral Synthesis and Biochemical Properties of Electron Rich Phenolic Sulfoxide Analogs of Sparsomycin *Gary A. Flynn and Ronald J. Ash* 673
Calmodulin-Binding Proteins of *Saccharomyces cerevisiae*
Yusen Liu, Yasuno Yamashita, Eiko Tsuchiya, and Tokichi Miyakawa 681
Transforming Growth Factor β (TGF-β) Reverses Phorbol Diester Resistance of a Breast Adenocarcinoma (MCF-7) Subline
M. Guerrin, J. M. Darbon, N. Guilbaud, B. Monsarrat, and A. Valette 687
Developmentally Regulated Lectin in Dark versus White Axolotl Embryos
G. N. Martha, Y. N. Frunchak, S. K. Frost, D. G. Thibaudeau, and N. C. Milos 695
Nonspecific Cross-Reacting Antigen (NCA) Expressed by Human Granulocytes: Six Species with Different Peptide Sizes and Membrane Anchoring Forms
Motomu Kuroki, Yoshino Matsuo, Masahide Kuroki, and Yuji Matsuoka 701
Parathyroid Hormone Causes a Transient Rise in Intracellular Ionized Calcium in Vascular Smooth Muscle Cells *Hiroyuki Kawashima* 709
Characterization of Phosphatidylinositol Phospholipase C Activity in Human Melanoma *Frank W. Perrella* 715
Protein Kinase C-γ Is Present in Adriamycin Resistant HL-60 Leukemia Cells
Angelo Aquino, Barbour S. Warren, James Omichinski, Kathleen D. Hartman, and Robert I. Glazer 723
Isolation of a High Specific Activity Pink, Monomeric Nitrous Oxide Reductase from *Achromobacter cycloclastes* *C. L. Hulse and B. A. Averill* 729
Purification of a Glycoprotein Excreted by *Trypanosoma cruzi* to Increase the Permeability of the Host-Cell Membrane *Santiago Castanys, Francisco Gamarro, Luis M. Ruiz-Pérez, and Antonio Osuna* 736
Activation of Promutagenic Chemicals by *Streptomyces griseus* Containing Cytochrome $P450_{soy}$ *F. Sima Sariaslani and Ralph G. Stahl, Jr.* 743
Osteogenin Inhibits Proliferation and Stimulates Differentiation in Mouse Osteoblast-like Cells (MC3T3-E1)
Slobodan Vukicevic, Frank P. Luyten, and A. H. Reddi 750
Autocrine Motility Factor Stimulates a Threefold Increase in Inositol Trisphosphate in Human Melanoma Cells
Elise C. Kohn, Lance A. Liotta, and Elliott Schiffmann 757
A Phospho-Oligosaccharide Can Reproduce the Stimulatory Effect of Insulin on Glycolytic Flux in Human Fibroblasts
Paola Bruni, Elisabetta Meacci, Matias Avila, Valeria Vasta, Marta Farnararo, José M. Mato, and Isabel Varela 765
Evidence for Complexation of P450 IIC6 by an Orphenadrine Metabolite
Gordon F. Reidy and Michael Murray 772
Different Regulation of Hepatic Peroxisomal β-Oxidation Activity in Rats Treated with Clofibrate and Partially Hydrogenated Marine Oil
Shuichi Horie and Tetsuya Suga 780
A Possible Role of cAMP Dependent Phosphorylation of Hepatic Microsomal Cytochrome P450: A Mechanism to Increase Lipid Peroxidation in Response to Hormone *Souren L. Mkrtchian and Kristoffer K. Andersson* 787
Immunoreactive Prohormone Atrial Natriuretic Peptides 1–30 and 31–67: Existence of a Single Circulating Amino-Terminal Peptide
Yu-Ming Chen, Peggy A. Whitson, and Nitza M. Cintrón 794

Metyrapone Modulation of Tyrosine Aminotransferase Induction by Dexamethasone in Cultured Hepatocytes
Roberto Tongiani, Silvana Piazzolla, and Aldo Paolicchi 801

Does 3,5,Dibromo-4-nitrosobenzene Sulfonate Spin Trap Superoxide Radicals?
N. B. Nazhat, G. Yang, R. E. Allen, D. R. Blake, and P. Jones 807

Secretagogue-Induced Oscillations of Cytoplasmic Ca^{2+} in Single β and α-Cells Obtained from Pancreatic Islets by Fluorescence-Activated Cell Sorting
Jin-Lin Wang and Michael L. McDaniel 813

Differences between Some Properties of Acetylated and Nonacetylated Forms of HMG1 Protein *Svetoslav I. Dimov, Evdokia A. Alexandrova, and Beltcho G. Beltchev* 819

Microtubule-Associated Protein 1A Is the Fibroblast HMW MAP Undergoing Mitogen-Stimulating Serine Phosphorylation
Alan K. Erickson, L. Bryan Ray, and Thomas W. Sturgill 827

Characterization and Amino-Terminal Sequence of Apoliprotein Al frmo Plasma High Density Lipoproteins in the Preruminant Calf, *Bos* spp.
Sylvie Auboiron, Doris A. Sparrow, Laurence Beaubatie, Dominique Bauchart, James T. Sparrow, P. Michel Laplaud, and M. John Chapman 833

Production and Significance of TGF-β in AT-3 Metastatic Cell Line Established from the Dunning Rat Prostatic Adenocarcinoma
Yuhsi Matuo, Nozomu Nishi, Hirotoshi Takasuka, Yoshishige Masuda, Katsuzo Nishikawa, John T. Isaacs, Pamela S. Adams, Wallace L. McKeehan, and Gordon H. Sato 840

Leukotriene B4 Induced Hyperadhesiveness of Endothelial Cells for Neutrophils
Jan Palmblad, Peter Lindström, and Richard Lerner 848

Isolation and Characterization of Extracellular Myeloperoxidase Precursor in HL-60 Cell Cultures *Michiyuki Yamada, Sook-Jin Hur, and Hiroko Toda* 852

Phenytoin 4-Hydroxylation by Rabbit Liver P450IIC3 and Identification of Orthologs in Human Liver Microsomes
Christopher J. Doecke, Lloyd N. Sansom, and Michael E. McManus 860

Intramolecular Long-Range Electron Transfer in the Hemerythrin Monomer: A Pulse Radiolysis Study *M. Faraggi and Michael H. Klapper* 867

Determination of Four Apparent Mercury Interaction Sites in Photosystem II by Using a New Modification of the Stern-Volmer Analysis
Guy Samson, Jean-Claude Morissette, and Radovan Popovic 873

Fatty Acid Requirement of B Lymphocytes Activated *in Vitro*
Waldemar Lernhardt 879

Disparate Gene Expression of Chemotactic Cytokines by Human Mononuclear Phagocytes *R. M. Strieter, S. W. Chensue, T. J. Standiford, M. A. Basha, H. J. Showell, and S. L. Kunkel* 886

Cloning and Characterization of the Growth Hormone-Dependent Insulin-like Growth Factor Binding Protein (IGFBP-3) in the Rat
Anthony L. Albiston and Adrian C. Herington 892

Calsequestrin, an Intracellular Calcium-Binding Protein of Skeletal Muscle Sarcoplasmic Reticulum, Is Homologous to Aspartactin, a Putative Laminin-Binding Protein of the Extracellular Matrix *Paul J. Yazaki, Sergio Salvatori, Roger A. Sabbadini, and A. Stephen Dahms* 898

An Evidence for Involvement of Two Histidine Residues in the Reaction of Ampicillin Acylase *Deog Jung Kim and Si Myung Byun* 904

Aggregating Platelets Increase Intracellular Calcium in Endothelial Cells through Release of Adenine Nucleotides
Roger C. Ashmore, Richard F. O'Brien, Thomas J. Stelzner, Ira M. Dauber, Lawrence D. Horwitz, Ivan F. McMurtry, and Karyl M. VanBenthuysen 909

Growth-Inhibitory Effects of 1,25-Dihydroxyvitamin D_3 on Normal Human Keratinocytes Cultured in Serum-Free Medium
Kunio Matsumoto, Koji Hashimoto, Yuri Nishida, Makoto Hashiro, and Kunihiko Yoshikawa 916

A Possible Model of Hemoprotein–Fatty Acid Peroxide Complex Demonstrated by Electron Spin Resonance *K. Tajima, M. Shigamatsu, J. Jinno, Y. Kawano, K. Mikami, K. Ishizu, and H. Ohya-Nishiguchi* 924

The Mouse Glucocorticoid Receptor DNA-Binding Domain Is Not Phosphorylated *in Vivo* *Wieke S. van der Weijden Benjamin, William J. Hendry III, and Robert W. Harrison III* 931

Characterization of the Two Oligosaccharides Present in the Preferential Hormonogenic Domain of Human Thyroglobulin
Jean-Louis Franc, Nicole Venot, and Claudine Marriq 937

Rabbit Nasal Cytochrome P450 NMa Has High Activity as a Nicotine Oxidase
David E. Williams, Xinxin Ding, and Minor J. Coon 945

Human Cytomegalovirus Stimulates Arachidonic Acid Metabolism through Pathways That Are Affected by Inhibitors of Phospholipase A2 and Protein Kinase C *Sazaly AbuBaker, Istvan Boldogh, and Thomas Albrecht* 953

Glutathione Disulfide Enhances the Reduced Glutathione Inhibition of Lipid Peroxidation in Rat Liver Microsomes
Richard W. Scholz, Kenneth S. Graham, and C. Channa Reddy 960

Attenuation of Inositol Trisphosphate Generation and Cytosolic Ca^{2+} Elevation in Dispersed Rat Parotid Acini Stimulated Simultaneously at Muscarinic and α_1-Adrenergic Receptors
Valerie J. Horn, Bruce J. Baum, and Indu S. Ambudkar 967

Effect of Gastric Distention on RNA Synthesis in Neonatal Chick Liver
Tatsuzo Oka, Sang Ho Kweon, Michiko Ito, Joon Pyo Han, Takeru Fujii, and Yasuo Natori 973

Isolation and Identification of a Polypeptide in the HSP 70 Family That Binds Substance P *Barry Oblas, Norman D. Boyd, Judith Luber-Narod, Victor E. Reyes, and Susan E. Leeman* 978

cDNA Cloning of a Novel Cell Adhesion Protein Expressed in Human Squamous Carcinoma Cells *Yuk-Chor Wong, Sai-Wah Tsao, Mika Kakefuda, and Samuel D. Bernal* 984

Plasminogen Activator Inhibitor 2 (PAI-2) Is Not Inactivated by Exposure to Oxidants Which Can Be Released from Activated Neutrophils
Mark S. Baker, Simon P. Green, Neil Goss, Michael Katrantzis, and William F. Doe 993

Stimulation of Mono- and Diacylglycerol Lipase Activities by Bradykinin in Neural Cultures *A. A. Farooqui, D. K. Anderson, C. Flynn, E. Bradel, E. D. Means, and L. A. Horrocks* 1001

Molecular Cloning of *smg* p21B and Identification of *smg* p21 Purified from Bovine Brain and Human Platelets as *smg* p21B
Yasushi Matsui, Akira Kikuchi, Masahito Kawata, Jun Kondo, Yutaka Teranishi, and Yoshimi Takai 1010

Detection of a Point Mutation in Sphingolipid Activator Protein-1 mRNA in Patients with a Variant Form of Metachromatic Leukodystrophy
Mohammad A. Rafi, Xun-Ling Zhang, Gregory DeGala, and David A. Wenger 1017

Evidence for the Presence of an Endogenous Cytosolic Protein Inhibitor of Intestinal Fucosyltransferase Activities
A. Martin, D. Ruggiero-Lopez, M. C. Biol, and P. Louisot 1024

Structural Studies of Rat Cathepsin E: Amino-Terminal Structure and Carbohydrate Units of Mature Enzyme
Satoshi Yonezawa, Takayuki Takahashi, Masao Ichinose, Kazumasa Miki, Junji Tanaka, and Shinsei Gasa 103[illegible]

"Hydration Memory" of Lysozyme: A Misinterpretation
Peter C. Kahn, Marc Bassompierre, and Marcel Waks 1039

Evidence for a Platelet-Activating Factor Receptor on Human Lymphoblastoid B Cells: Activation of the Phosphatidylinositol Cycle and Induction of Calcium Mobilization
Peter G. Schulam, Girish Putcha, Janet Franklin-Johnson, and William T. Shearer 1047

Galactosylceramide and Galactosylsphingosine Loading Studies in Cultured Skin Fibroblasts in Human and Murine Globoid Cell Leukodystrophy
H. Ida, K. Kusano, H. Suzuki, T. Tokoro, and Y. Eto 1053

ERRATUM
Volume 157, Number 2, December 15, 1989: Junji Nishimura, Michael Kolber, and Cornelis van Breemen, "Norepinephrine and GTP-γ-S Increase Myofilament Ca^{2+} Sensitivity in α-Toxin Permeabilized Arterial Smooth Muscle," pp. 677–683 1061

Volume 166, Number 3, February 14, 1990

AUTHOR INDEX, Volume 166, Number 3, February 14, 1990 iii

Characterization of a cDNA Clone Encoding a New Species of the Nonspecific Cross-Reacting Antigen (NCA), a Member of the CEA Gene Family
Fumiko Arakawa, Motomu Kuroki, Yoshio Misumi, Shinzo Oikawa, Hiroshi Nakazato, and Yuji Matsuoka 1063

Induction of Rat Hepatic P450IIE1 (CYP 2E1) by Pyridine: Evidence for Enhanced Protein Synthesis in the Absence of Transcriptional Activation
Sang Geon Kim and Raymond F. Novak 1072

Characterization of Immunoreactive Brain Natriuretic Peptide in Human Cardiac Atrium
Hitone Tateyama, Jun Hino, Naoto Minamino, Kenji Kangawa, Toshio Ogihara, and Hisayuki Matsuo 1080

Parathyroid Hormone-Related Protein Is a Possible Autocrine Growth Inhibitor for Lymphocytes
Naoto Adachi, Ken Yamaguchi, Yoshio Miyake, Satoshi Honda, Koichi Nagasaki, Yasuto Akiyama, Isamu Adachi, and Kaoru Abe 1088

Tumor Necrosis Factor Antagonizes Inhibitory Effect of Azidothymidine on Human Immunodeficiency Virus (HIV) Replication *in Vitro*
Masahiko Ito, Masanori Baba, Shuichi Mori, Kazuhiro Hirabayashi, Akihiko Sato, Shiro Shigeta, and Erik De Clercq 1095

A ^{1}H NMR Study of the Solution Conformation of the Neuropeptide Galanin
Anders B. A. Wennerberg, Robert M. Cooke, Mats Carlquist, Rudolf Rigler, and Iain D. Campbell 1102

Netropsin, Distamycin, and Berenil Interact Differentially with a High-Affinity Binding Site for the High Mobility Group Protein HMG-I
Michael Wegner and Friedrich Grummt 1110

Inhibition by Serum Components of the Expression of Lipoprotein Lipase Gene upon Stimulation by Growth Hormone
Anne Pradines-Figueres, Sylvie Barcellini-Couget, Christian Dani, Christian Baudoin, and Gérard Ailhaud 1118

Cytosolic-Nuclear Tumor Promoter-Specific Binding Protein (CN-TPBP) in Human Promyelocytic Leukemia Cells HL-60
Yuichi Hashimoto and Koichi Shudo 1126

The HIV Protein, gP120, Activates Nuclear Protein Kinase C in Nuclei from Lymphocytes and Brain *Nancy E. Zorn, Cheryl L. Weill, and Diane Haddock Russell* 1133

Linear Contour Length Dependence of Electrical Polarizability of Nucleosomal DNA Fragments: Implications for the Flexibility of DNA
Marie-Françoise Hacques and Christian Marion 1140

Iron-Regulated Outer Membrane Proteins in the Periodontopathic Bacterium, *Bacteroides gingivalis* *Thomas E. Bramanti and Stanley C. Holt* 1146

Regioselectivity and Stereoselectivity in the Metabolism of HMG-CoA Reductase Inhibitors *Kamlesh P. Vyas, Prasad H. Kari, and Steven M. Pitzenberger* 1155

Independent Induction of Interleukin 6 and Prostaglandin E_2 by Interleukin 1 in Human Articular Chondrocytes
R. A. D. Bunning, R. G. G. Russell, and J. Van Damme 1163

Somatostatin Analog (SMS 201-995) Inhibits the Basal and Angiotensin II-Stimulated [^{3}H]Thymidine Uptake by Rat Adrenal Glands
M. Pawlikowski, A. Lewiński, E. Sewerynek, M. Szkudliński, J. Kunert-Radek, and E. Wajs 1171

Lysosomal Acid Phosphatase Is Transported via Endosomes to Lysosomes
Yoshitaka Tanaka, Shinji Yano, Kazutaka Okada, Toyoko Ishikawa, Masaru Himeno, and Keitaro Kato 1176

Mechanism of Glucocorticoid Enhancement of the Responsiveness of Ovine Adrenocortical Cells to Adrenocorticotropin
Halima Darbeida and Philippe Durand 1183

Differential Splicing of Alzheimer's Disease Amyloid A4 Precursor RNA in Rat Tissues: $PreA4_{695}$ mRNA Is Predominantly Produced in Rat and Human Brain *Jie Kang and Benno Müller-Hill* 1192

Synthesis of Lysyl Oxidase in Experimental Hepatic Fibrosis
Hisao Wakasaki and Akira Ooshima 1201

Acidic and Basic Fibroblast Growth Factor mRNAs Are Expressed by Skeletal Muscle Satellite Cells *Jeanine Alterio, Yves Courtois, Jacques Robelin, Daniel Bechet, and Isabelle Martelly* 1205

Phorbol Ester Promotes a Sustained Down-Regulation of Endothelin Receptors and Cellular Responses to Endothelin in Human Vascular Smooth Muscle Cells *Thérèse J. Resink, Timothy Scott-Burden, Erika Weber, and Fritz R. Bühler* 1213

A Synthetic Peptide Substrate for Selective Assay of Protein Kinase C
Ichiro Yasuda, Akira Kishimoto, Shin-ichiro Tanaka, Masahiro Tominaga, Atsushi Sakurai, and Yasutomi Nichizuka 1220

Preparation and Characterization of Polyclonal and Monoclonal Antibodies against the Insecticide DDT
Daniel Bürgisser, Stefan Frey, Bernd Gutte, and Stephan Klauser 1228

Purification of a Novel eIF-2α Protein Kinase from Calf Brain
Alberto Alcázar, Enrique Méndez, M. Elena Martín, and Matilde Salinas 1237
Increase in the Catalytic Rate of β-Galactosidase by Selection in Chemostats at Changing Dilution Rates *Suh-Der Tsen* 1245
Detection of 2*H*-1,4-Thiazine-5,6-dihydro-3-carboxylic Acid (Aminoethylcysteine Ketimine) in the Bovine Brain
M. Nardini, R. M. Matarese, L. Pecci, A. Antonucci, G. Ricci, and D. Cavallini 1251
Thyroid Peroxidase Gene Promoter Confers TSH Responsiveness to Heterologous Reporter Genes in Transfection Experiments
Marc J. Abramowicz, Gilbert Vassart, and Daniel Christophe 1257
Expression of Human Pregnancy Specific β_1 Glycoprotein (PSG) Genes during Placental Development *Catherine Streydio and Gilbert Vassart* 1265
Presence of Endothelin-1-like Immunoreactivity in Human Cerebrospinal Fluid
Y. Hirata, T. Matsunaga, K. Ando, T. Furukawa, H. Tsukagoshi, and F. Marumo 1274
The Effect of Sulfhydryl Blocking Groups on the Thermal Unfolding of αα Tropomyosin-Coiled Coils
Marilyn Emerson Holtzer, Alfred Holtzer, and Dan L. Crimmins 1279
Interaction of DNAK with ATP: Binding, Hydrolysis, and Ca^{2+}-Stimulated Autophosphorylation *Barbara L. Dalie, Diane A. Skaleris, Kathrin Köhle, Herbert Weissbach, and Nathan Brot* 1284
The Effect of N-Linked Glycosylation on the Substrate Preferences of UDP Glucuronosyltransferases *Peter I. Mackenzie* 1293
Expression of Retinoic Acid Receptor Genes and the Ligand-Binding Selectivity of Retinoic Acid Receptors (RARs)
Yuichi Hashimoto, Hiroyuki Kagechika, and Koichi Shudo 1300
Hepatic Microsomal Oxygenation of Aldehydes to Carboxylic Acids
Kazuhito Watanabe, Shizuo Narimatsu, Ikuo Yamamoto, and Hidetoshi Yoshimura 1308
Tumor Necrosis Factor-α Enhances Inhibitory Effects of Interleukin-1β on Leydig Cell Steroidogenesis *J. H. Calkins, H. Guo, M. M. Sigel, and T. Lin* 1313
cis,cis-Cyclohexane 1,3,5-Triol Polyphosphates Release Calcium from *Neurospora crassa* via an Unspecific Ins 1,4,5-P_3 Receptor
C. Schultz, G. Gebauer, T. Metschies, L. Rensing, and B. Jastorff 1319
Dopachrome Conversion Factor Functions as an Isomerase
John M. Pawelek 1328
Two Sulphonated Dye Compounds Which Compete for Inositol 1,4,5-Trisphosphate Binding to Rat Liver Microsomes: Effects on 5′-Phosphatase Activity *Martin D. Bootman, Graham F. Pay, Caroline E. Rick, and Michael A. Tones* 1334
TPA Stimulates S6 Phosphorylation but not Protein Synthesis in Ehrlich Cells
Kathleen S. Montine and Edgar C. Henshaw 1340
Na^+-Dependent Ca^{2+} Efflux Inhibits Stimulus-Induced Secretion in Bovine Chromaffin Cells *Yasumasa Goh and Atsushi Kurosawa* 1346
The Influence of pH on Ca^{2+} Exchange in Ferret Heart Mitochondria
C. H. Fry and J. A. S. McGuigan 1352
Drug Resistance to *cis*-Diamminedichloroplatinum(II) in Chinese Hamster Ovary Cell Lines Transfected with Glutathione *S*-Transferase-π Gene
Miki Miyazaki, Kimitoshi Kohno, Yoshio Saburi, Ken-ichi Matsuo, Mayumi Ono, Michihiko Kuwano, Shigeki Tsuchida, Kiyomi Sato, Masaharu Sakai, and Masami Muramatsu 1358

Characterization of a Reversible Denaturational Transition Occurring in the Case of an Irreversibly Denaturing Membrane Spanning Protein
Leonard Remo Maneri 1365

Cytochrome P450-Catalyzed Formation of 20-Hydroxyecdysone in Larval Housefly Mitochondria *Jayanthi Srivatsan, Margaret Weirich, and Moises Agosin* 1372

Tyrosine Phosphorylation of Cytosolic Proteins in Human Erythrocytes
G. Clari, L. Dalla Libera, and V. Moret 1378

Amino Acid Sequence of Ghilanten: Anticoagulant-Antimetastatic Principle of the South American Leech, *Haementeria ghilianii*
Dale T. Blankenship, Robert G. Brankamp, George D. Manley, and Alan D. Cardin 1384

Defluorination of 1,1,1,2-Tetrafluoroethane (R-134a) by Rat Hepatocytes
Michael J. Olson, Charles A. Reidy, and John T. Johnson 1390

Multiple Small Molecular Weight Guanine Nucleotide-Binding Proteins in Human Erythrocyte Membranes
Gianluca Damonte, Adina Sdraffa, Elena Zocchi, Lucrezia Guida, Carolina Polvani, Michela Tonetti, Umberto Benatti, Patrice Boquet, and Antonio De Flora 1398

Inhibition of Human β-Factor XII_A by Squash Family Serine Proteinase Inhibitors
Richard Wynn and Michael Laskowski, Jr. 1406

The Isolation and Properties of Collagenolytic Proteases from Crab Hepatopancreas *O. A. Klimova, S. I. Borukhov, N. I. Solovyeva, T. O. Balaevskaya, and A. Ya. Strongin* 1411

Trifluoperazine Inhibition of Contraction in Permeabilized Skeletal, Cardiac, and Smooth Muscles *Árvind Babu and Jagdish Gulati* 1421

Activation of Heme Oxygenase and Heat Shock Protein 70 Genes by Stress in Human Hepatoma Cells *Kinuko Mitani, Hiroyoshi Fujita, Shigeru Sassa, and Attallah Kappas* 1429

An Electron Paramagnetic Resonance Probe to Detect Local Z-DNA Conformations *Oliver K. Strobel, Robert S. Keyes, and Albert M. Bobst* 1435

Inhibition of *Trypanosoma cruzi* Growth and Sterol Biosynthesis by Lovastatin
M. Florin-Christensen, J. Florin-Christensen, C. Garin, E. Isola, R. R. Brenner, and L. Rasmussen 1441

Unusual Denaturation Properties of Vicilin from *Cajanus cajan*
Yogesh R. Mawal, Madhumalti R. Mawal, and P. K. Ranjekar 1446

Determination of Amyloid β Protein Precursors Harboring Active Form of Proteinase Inhibitor Domains in Cerebrospinal Fluid of Alzheimer's Disease Patients by Trypsin-Antibody Sandwich ELISA
Nobuya Kitaguchi, Yasuo Tokushima, Kiyomi Oishi, Yasuyuki Takahashi, Satoshi Shiojiri, Shigenobu Nakamura, Seigo Tanaka, Ryoji Kodaira, and Hirataka Ito 1453

Specific Inhibitory Conformation of Dipeptides for Chymotrypsin
Yasuyuki Shimohigashi, Tomohisa Ogawa, Hiroaki Kodama, Hiroshi Sakamoto, Haruko Yoshitomi, Michinori Waki, and Motonori Ohno 1460

Alanine:Glyoxylate Aminotransferase 1 Is Present in the Peroxisomes of Guinea Pig Kidney *Sueko Hayashi and Tomoo Noguchi* 1467

Dual Action of Hydroxylated Diphenylethylene Estrogens on Protein Kinase C
Eric Bignon, Akira Kishimoto, Michel Pons, André Crastes de Paulet, Jacques Gilbert, Jean-François Miquel, and Yasutomi Nishizuka 1471

Activin A Stimulates Meiotic Maturation of the Rat Oocyte *in Vitro*
Masahiro Itoh, Masao Igarashi, Kiyohiko Yamada, Yoshihisa Hasegawa, Moritoshi Seki, Yuzuru Eto, and Hiroshiro Shibai 1479

Characterization of a Functional Domain of Human Calpastatin
Takashi Uemori, Tomoko Shimojo, Kiyozo Asada, Tadao Asano, Fusao Kimizuka, Ikunoshin Kato, Masatoshi Maki, Masakazu Hatanaka, Takashi Murachi, Hiroyuki Hanzawa, and Yoji Arata 1485

cDNA Cloning of the Hydroxysteroid Sulfotransferase STa Sharing a Strong Homology in Amino Acid Sequence with the Senescence Marker Protein SMP-2 in Rat Livers
Kenichiro Ogura, Jiro Kajita, Hiroyuki Narihata, Tadashi Watabe, Shogo Ozawa, Kiyoshi Nagata, Yasushi Yamazoe, and Ryuichi Kato 1494

Nucleotide Sequence Determination of Mouse, Chicken, and *Xenopus laevis rig* cDNAs: The *rig*-Encoded Protein Is Extremely Conserved during Vertebrate Evolution *Akira Sugawara, Koji Nata, Chiyoko Inoue, Shin Takasawa, Hiroshi Yamamoto, and Hiroshi Okamoto* 1501

ERRATA

Volume 157, Number 2, December 15, 1988: Junji Nishimura, Michael Kolber, and Cornelis van Breemen, "Norepinephrine and GTP-γ-S Increase Myofilament Ca^{2+} Sensitivity in α-Toxin Permeabilized Arterial Smooth Muscle," pp. 677–683 1508

Volume 163, Number 2, September 15, 1989: Alexander E. Maccubbin, Lida Caballes, Girish B. Chheda, Robert F. Struck, and Hira L. Gurtoo, "Formation of a Phosphoramide Mustard-Nucleotide Adduct That Is Not by Alkylation at the N7 Position of Guanine," pp. 843–850 1508

Author Index for Volume 166 1509

NOTICE

The Subject Index for Volume 166 will appear as part of a cumulative index for the year 1990.

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(Continued from inside back cover)

The Effect of N-Linked Glycosylation on the Substrate Preferences of UDP Glucuronosyltransferases *Peter I. Mackenzie* 1293

Expression of Retinoic Acid Receptor Genes and the Ligand-Binding Selectivity of Retinoic Acid Receptors (RARs) *Yuichi Hashimoto, Hiroyuki Kagechika, and Koichi Shudo* 1300

Hepatic Microsomal Oxygenation of Aldehydes to Carboxylic Acids *Kazuhito Watanabe, Shizuo Narimatsu, Ikuo Yamamoto, and Hidetoshi Yoshimura* 1308

Tumor Necrosis Factor-α Enhances Inhibitory Effects of Interleukin-1β on Leydig Cell Steroidogenesis *J. H. Calkins, H. Guo, M. M. Sigel, and T. Lin* 1313

cis,cis-Cyclohexane 1,3,5-Triol Polyphosphates Release Calcium from *Neurospora crassa* via an Unspecific Ins 1,4,5-P_3 Receptor *C. Schultz, G. Gebauer, T. Metschies, L. Rensing, and B. Jastorff* 1319

Dopachrome Conversion Factor Functions as an Isomerase *John M. Pawelek* 1328

Two Sulphonated Dye Compounds Which Compete for Inositol 1,4,5-Trisphosphate Binding to Rat Liver Microsomes: Effects on 5′-Phosphatase Activity *Martin D. Bootman, Graham F. Pay, Caroline E. Rick, and Michael A. Tones* 1334

TPA Stimulates S6 Phosphorylation but not Protein Synthesis in Ehrlich Cells *Kathleen S. Montine and Edgar C. Henshaw* 1340

Na^+-Dependent Ca^{2+} Efflux Inhibits Stimulus-Induced Secretion in Bovine Chromaffin Cells *Yasumasa Goh and Atsushi Kurosawa* 1346

The Influence of pH on Ca^{2+} Exchange in Ferret Heart Mitochondria *C. H. Fry and J. A. S. McGuigan* 1352

Drug Resistance to *cis*-Diamminedichloroplatinum(II) in Chinese Hamster Ovary Cell Lines Transfected with Glutathione *S*-Transferase-π Gene *Miki Miyazaki, Kimitoshi Kohno, Yoshio Saburi, Ken-ichi Matsuo, Mayumi Ono, Michihiko Kuwano, Shigeki Tsuchida, Kiyomi Sato, Masaharu Sakai, and Masami Muramatsu* 1358

Characterization of a Reversible Denaturational Transition Occurring in the Case of an Irreversibly Denaturing Membrane Spanning Protein *Leonard Remo Maneri* 1365

Cytochrome P450-Catalyzed Formation of 20-Hydroxyecdysone in Larval Housefly Mitochondria *Jayanthi Srivatsan, Margaret Weirich, and Moises Agosin* 1372

Tyrosine Phosphorylation of Cytosolic Proteins in Human Erythrocytes *G. Clari, L. Dalla Libera, and V. Moret* 1378

Amino Acid Sequence of Ghilanten: Anticoagulant-Antimetastatic Principle of the South American Leech, *Haementeria ghilianii* *Dale T. Blankenship, Robert G. Brankamp, George D. Manley, and Alan D. Cardin* 1384

Defluorination of 1,1,1,2-Tetrafluoroethane (R-134a) by Rat Hepatocytes *Michael J. Olson, Charles A. Reidy, and John T. Johnson* 1390

Multiple Small Molecular Weight Guanine Nucleotide-Binding Proteins in Human Erythrocyte Membranes *Gianluca Damonte, Adina Sdraffa, Elena Zocchi, Lucrezia Guida, Carolina Polvani, Michela Tonetti, Umberto Benatti, Patrice Boquet, and Antonio De Flora* 1398

(Continued from following page)

Inhibition of Human β-Factor XII_A by Squash Family Serine Proteinase Inhibitors
Richard Wynn and Michael Laskowski, Jr. 1406

The Isolation and Properties of Collagenolytic Proteases from Crab Hepatopancreas *O. A. Klimova, S. I. Borukhov, N. I. Solovyeva, T. O. Balaevskaya, and A. Ya. Strongin* 1411

Trifluoperazine Inhibition of Contraction in Permeabilized Skeletal, Cardiac, and Smooth Muscles *Árvind Babu and Jagdish Gulati* 1421

Activation of Heme Oxygenase and Heat Shock Protein 70 Genes by Stress in Human Hepatoma Cells *Kinuko Mitani, Hiroyoshi Fujita, Shigeru Sassa, and Attallah Kappas* 1429

An Electron Paramagnetic Resonance Probe to Detect Local Z-DNA Conformations *Oliver K. Strobel, Robert S. Keyes, and Albert M. Bobst* 1435

Inhibition of *Trypanosoma cruzi* Growth and Sterol Biosynthesis by Lovastatin
M. Florin-Christensen, J. Florin-Christensen, C. Garin, E. Isola, R. R. Brenner, and L. Rasmussen 1441

Unusual Denaturation Properties of Vicilin from *Cajanus cajan*
Yogesh R. Mawal, Madhumalti R. Mawal, and P. K. Ranjekar 1446

Determination of Amyloid β Protein Precursors Harboring Active Form of Proteinase Inhibitor Domains in Cerebrospinal Fluid of Alzheimer's Disease Patients by Trypsin-Antibody Sandwich ELISA
Nobuya Kitaguchi, Yasuo Tokushima, Kiyomi Oishi, Yasuyuki Takahashi, Satoshi Shiojiri, Shigenobu Nakamura, Seigo Tanaka, Ryoji Kodaira, and Hirataka Ito 1453

Specific Inhibitory Conformation of Dipeptides for Chymotrypsin
Yasuyuki Shimohigashi, Tomohisa Ogawa, Hiroaki Kodama, Hiroshi Sakamoto, Haruko Yoshitomi, Michinori Waki, and Motonori Ohno 1460

Alanine:Glyoxylate Aminotransferase 1 Is Present in the Peroxisomes of Guinea Pig Kidney *Sueko Hayashi and Tomoo Noguchi* 1467

Dual Action of Hydroxylated Diphenylethylene Estrogens on Protein Kinase C
Eric Bignon, Akira Kishimoto, Michel Pons, André Crastes de Paulet, Jacques Gilbert, Jean-François Miquel, and Yasutomi Nishizuka 1471

Activin A Stimulates Meiotic Maturation of the Rat Oocyte *in Vitro*
Masahiro Itoh, Masao Igarashi, Kiyohiko Yamada, Yoshihisa Hasegawa, Moritoshi Seki, Yuzuru Eto, and Hiroshiro Shibai 1479

Characterization of a Functional Domain of Human Calpastatin
Takashi Uemori, Tomoko Shimojo, Kiyozo Asada, Tadao Asano, Fusao Kimizuka, Ikunoshin Kato, Masatoshi Maki, Masakazu Hatanaka, Takashi Murachi, Hiroyuki Hanzawa, and Yoji Arata 1485

cDNA Cloning of the Hydroxysteroid Sulfotransferase STa Sharing a Strong Homology in Amino Acid Sequence with the Senescence Marker Protein SMP-2 in Rat Livers
Kenichiro Ogura, Jiro Kajita, Hiroyuki Narihata, Tadashi Watabe, Shogo Ozawa, Kiyoshi Nagata, Yasushi Yamazoe, and Ryuichi Kato 1494

Nucleotide Sequence Determination of Mouse, Chicken, and *Xenopus laevis rig* cDNAs: The *rig*-Encoded Protein Is Extremely Conserved during Vertebrate Evolution *Akira Sugawara, Koji Nata, Chiyoko Inoue, Shin Takasawa, Hiroshi Yamamoto, and Hiroshi Okamoto* 1501

(Continued from following page)

ERRATA

Volume 157, Number 2, December 15, 1988: Junji Nishimura, Michael Kolber, and Cornelis van Breemen, "Norepinephrine and GTP-γ-S Increase Myofilament Ca^{2+} Sensitivity in α-Toxin Permeabilized Arterial Smooth Muscle," pp. 677–683 1508

Volume 163, Number 2, September 15, 1989: Alexander E. Maccubbin, Lida Caballes, Girish B. Chheda, Robert F. Struck, and Hira L. Gurtoo, "Formation of a Phosphoramide Mustard-Nucleotide Adduct That Is Not by Alkylation at the N7 Position of Guanine," pp. 843–850 1508

Author Index for Volume 166 1509

NOTICE

The Subject Index for Volume 166 will appear as part of a cumulative index for the year 1990.